IN THE ABSTRACT

Please substitute the attached Abstract of the Disclosure for the abstract as originally filed.

REMARKS

The above amendments are being made to place the application in better condition for examination.

Entry of the amendment is respectfully solicited.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

Page 1, line 3 has been replaced with the following:

--CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a 35 USC 371 application of PCT/DE 00/02825 filed on August 18, 2000.BACKGROUND OF THE INVENTION

~~Prior Art~~ Field of the Invention--;

between lines 10 and 11, the following has been inserted:

--Description of the Prior Art--

Page 2, before line 1, the following has been inserted:

--SUMMARY OF THE INVENTION--

Page 5, between lines 3 and 4, the following has been inserted:

--BRIEF DESCRIPTION OF THE DRAWINGS--

the second paragraph, lines 4-8, has been amended as follows:

--Further advantages and advantageous features of the invention can be learned from the ensuing description, ~~the drawing and the claims. One exemplary embodiment of the subject of the invention is shown in the drawing and described in further detail below. Shown are:~~ taken with the drawings, in which:--

the third paragraph, lines 9 and 10, has been amended as follows:

--Fig. 1~~:~~ is a cross section through an injector according to the invention; and--

line 11 has been amended as follows:

--Fig. 2: is an enlarged detail X of Fig. 1.--

between lines 11 and 12, the following has been inserted:

--DESCRIPTION OF THE PREFERRED EMBODIMENTS--

Page 6, the last paragraph, lines 8-26, has been amended as follows:

--In Fig. 2, an enlarged detail X of Fig. 1 of the injector of the invention is shown. In this view it can be seen that the valve control chamber 11 is defined by an end face 33 of the nozzle needle 21. A closing piston 34 is located in the valve control chamber 11 and has a first, larger bore 35 and a second, smaller throttle bore 36. The stroke of the closing piston 34 in the direction of the magnet valve 15 is limited by a stroke stop 37. A pin 38 with a conical tip that fits into a complimentary sealing seat 39 of the closing piston 34 protrudes from the end face 33 of the nozzle needle 21. Fig. 2 shows a state of the injector in which the closing piston 34 rests on the stroke stop 37, and the nozzle needle is seated on its nozzle needle seat 22, not shown in Fig. 2. In this position, there is a gap between the pin 38 and the sealing seat 39 of the closing piston 34, so the fuel 3, not shown in Fig. 2, can flow through the first bore 35 of the closing piston 34 into the part of the valve control chamber 11 located between the closing piston 34 and the nozzle needle ~~22~~ 21.--

Page 7, the first paragraph, lines 1-11, has been amended as follows:

--When the outflow throttle 13 is closed, the hydraulic force acting on the end face 33 of the nozzle needle 21 is greater than the hydraulic force acting the cross-sectional change 23, because the end face 33 of the nozzle needle 21 is larger than the annular face of the area of the cross-sectional change 23. If the high-pressure pump,

not shown, of the fuel injection system is not driven because the engine is at a stop, then a closing spring 40, acting on the end face 33 of the nozzle needle 21, presses the nozzle needle 21 against the nozzle needle seat 22 shown in Fig. 1 and thus closes the injection nozzle 7 or injector.--

the second paragraph, lines 12-24, has been amended as follows:

--When the outflow throttle 13 is opened, which happens when a ball 41 of the magnet valve 15, not described in detail, is lifted from a ball seat 42, the pressure in the valve control chamber 11 drops. As a consequence, the hydraulic force acting on the end face 33 drops as well. As soon as this hydraulic force is less than the hydraulic force acting on the cross-sectional change area 23, the nozzle needle 21 moves in the direction of the closing piston 34, until the pin 38 rests on the sealing seat 39. As a result, the injection nozzle 7 shown in Fig. 1 is opened, and the fuel 3 is injected into the combustion chamber. The opening travel of the nozzle needle 21 is represented in Fig. 2 by the nozzle needle stroke "h".--

Page 8, the last paragraph, starting on line 16, has been amended as follows:

--To terminate the injection, the outflow throttle 13 is closed by the ball 41 of the magnet valve 15, in a known manner not explained in further detail. As a result of the closure of the outflow throttle 13, virtually the same rail pressure builds up again via the inlet throttle 9 in a portion 43 of the valve control chamber 11 that is defined by the closing piston 34 and the outflow throttle 13. This pressure exerts a hydraulic force on the nozzle needle 21 via the end face 45 of the closing piston 34 and via the pin 38 resting on the sealing seat 39. As soon as this hydraulic force exceeds the hydraulic force acting on the cross-sectional change area 23, the nozzle needle 21 closes.

Because the end face 45 of the closing piston is markedly larger in comparison to the annular face area of the cross-sectional change 23, the closing motion takes place very fast and with great force. Simultaneously with the closing motion, a small portion of the fuel, flowing into the portion 43 of the valve control chamber 11, flows through the throttle bore 36 into the valve control chamber 11 defined by the closing piston 34 and by the end face 33 of the nozzle needle 21. The closing motion takes place so fast that before a pressure equalization is reached, the nozzle needle 21 rests on the nozzle needle seat 22 again, and the injection is terminated. The closing speed of the nozzle needle 21 is determined essentially by the flow through the inlet throttle 9.--

Page 9, the last paragraph, lines 15-27, has been amended as follows:

--In order for the closing piston 34 to move to the outset position against the stroke stop 37 after the end of injection, the portion of the valve control chamber 11 defined by the closing piston 34 and the end face 33 of the nozzle needle 21 is filled with fuel through the throttle bore 36, while the closing spring 40 presses the closing piston 34 upward. It is also conceivable to omit the throttle bore 36 and to dimension the play of the closing piston 34 in the housing 29 in such a way that the fuel flows through the annular gap between the closing piston 34 and the housing 29. The second end face 47 of the closing piston 34 can also, as shown in Fig. 2, have a shoulder, which serves for instance to guide the closing spring 40.--

Page 10, the paragraph, lines 1-4, has been delete as follows:

~~All the characteristics found in the description, the ensuing claims and the drawing can be essential to the invention both individually and in arbitrary combination with one another.~~

the following new paragraph has been inserted:

--The foregoing relates to a preferred exemplary embodiment of the invention, it being understood that other variants and embodiments thereof are possible within the spirit and scope of the invention, the latter being defined by the appended claims.--

Page 14, the abstract was amended as follows:

~~Abstract~~ **ABSTRACT OF THE DISCLOSURE**

A common rail injector is proposed which is very compact in structure and nevertheless brings high closing forces to bear at the end of the injection. This is attained, among other provisions, in that the closing piston ~~(34)~~ has a larger diameter than the nozzle needle ~~(21). (Fig. 2)~~